Selected Abstracts from the February Issue of the European Journal of Vascular and Endovascular Surgery

The VIRTUE Registry of Type B Thoracic Dissections – Study Design and Early Results

The VIRTUE Registry Investigators. Eur J Vasc Endovasc Surg 2011;41:8-15.

Introduction: Endovascular procedures for repair of Type B aortic dissection have become increasingly common and are often considered to be first line therapy for acute complicated dissections. The long term durability of these repairs is largely undefined.

Methods: The Virtue Registry is a prospective, non-randomised, multi centre European Clinical Registry designed to inform on the clinical and morphological outcomes of 100 patients with Type B aortic dissection treated with the Medtronic Valiant thoracic stent graft. Patients with acute, sub-acute and chronic Type B dissections will be prospectively followed for three years. Clinical outcomes and aortic morphology will be defined.

Results: Fifty patients had an acute dissection, 24 a sub-acute dissection and 26 a chronic lesion. The 30-day mortality for the acute, sub-acute and chronic lesions was 8%, 0% and 0%. The in hospital composite outcome (mortality, stroke or paraplegia) for the three groups was 16%, 0% and 3.8% respectively. The effect of left subclavian artery (LSCA) revascularisation was defined with the composite endpoint of patients with a covered, non-revascularised LSCA being 20% as compared to 5.8% in the covered, revascularised group.

Conclusion: The early outcomes for the treatment of Type B aortic dissection are reported in the Virtue Registry. Longer term follow-up is planned to report on clinical and morphological outcomes up to 36 months post-procedure.

Prospective Comparative Analysis of Colour-Doppler Ultrasound, Contrast-enhanced Ultrasound, Computed Tomography and Magnetic Resonance in Detecting Endoleak after Endovascular Abdominal Aortic Aneurysm Repair

Cantisani V., Ricci P., Grazhdani H., Napoli A., Fanelli F., Catalano C., Galati G., D'Andrea V., Biancari F., Passariello R. Eur J Vasc Endovasc Surg 2011;41:35-41.

Objectives: To assess the accuracy of colour-Doppler ultrasound (CDUS), contrast-enhanced ultrasonography (CEUS), computed tomography angiography (CTA) and magnetic resonance angiography (MRA) in detecting endoleaks after endovascular abdominal aortic aneurysm repair (EVAR).

Design: Prospective, observational study.

Materials and methods: From December 2007 to April 2009, 108 consecutive patients who underwent EVAR were evaluated with CDUS, CEUS, CTA and MRA as well as angiography, if further treatment was necessary. Sensitivity, specificity, accuracy and negative predictive value of ultrasound examinations were compared with CTA and MRA as the reference standards, or with angiography when available.

Results: Twenty-four endoleaks (22%, type II: 22 cases, type III: two cases) were documented. Sensitivity and specificity of CDUS, CEUS, CTA, and MRA were 58% and 93%, 96% and 100%, 83% and 100% and 96% and 100% respectively. CEUS allowed better classification of endoleaks in 10, two and one patients compared with CDUS, CTA and MRA, respectively.

Conclusions: The accuracy of CEUS in detecting endoleaks after EVAR is markedly better than CDUS and is similar to CTA and MRA. CEUS seems to be a feasible tool in the long-term surveillance after EVAR, and it may better classify endoleaks missed by other imaging techniques.

Severe Proximal Aneurysm Neck Angulation: Early Results Using the Endurant Stentgraft System

Bastos Gonçalves F., de Vries J.-P.P.M., van Keulen J.W., Dekker H., Moll F.L., van Herwaarden J.A., Verhagen H.J.M. Eur J Vasc Endovasc Surg 2011;41:42-9.

Objective: Angulation of the proximal aneurysm neck has been associated with adverse outcome after EVAR. We aim to investigate the influence of angulation on early results when using the Endurant Stentgraft System.

Methods: A retrospective analysis of a prospective multicentre database identified 45 elective patients treated with the Endurant stentgraft with severe angulation of the proximal neck, which were compared to a control group without significant angulation. Endpoints were early technical and clinical success, deployment accuracy and differences in operative details.

Results: Mean age was 74 with 86.4% males. Mean infrarenal angle (β) was 80.8°±16 and mean suprarenal angle (α) was 51.4°±21. Patients in the angulated group had larger aneurysms (mean 309 cc *vs.* 187 cc), shorter necks (mean 27 mm ± 14 vs. 32.6 mm ± 13) and 74% (vs. 56%) were ASA III/IV. Technical success was 100%, with one patient requiring an unplanned proximal extension. No differences were found regarding early type-I endoleaks (0% *vs.* 0%), major postoperative complications (6.7% *vs.* 6.2%; $p = 0.77$) or early survival (97.8% *vs.* 96.9%, $p = 0.79$). Distance from lowest renal artery to prosthesis was 2.4 mm ± 2.7 *vs.* 2.3 mm ± 4.8, $p = 0.9$. Operative details were equivalent for both groups.

Conclusions: Treatment with the Endurant stentgraft is technically feasible and safe, with satisfactory results in angulated and non-angulated anatomies alike. No sealing length was lost in extremely angulated cases, confirming the device's high conformability. Mid- and long-term data are awaited to verify durability, but early results are promising and challenge current opinion concerning neck angulation.

A Systematic Literature Review of the Efficacy and Safety of the Prostar XL Device for the Closure of Large Femoral Arterial Access Sites in Patients Undergoing Percutaneous Endovascular Aortic Procedures

Haulon S., Hassen Khodja R., Proudfoot C.W., Samuels E. Eur J Vasc Endovasc Surg 2011;41:50-63.

Objectives: To identify and analyse existing evidence from published studies evaluating the efficacy and safety of a percutaneous vessel closure device for the closure of large arterial femoral arterial access sites (≥10 French).

Design: This study was a systematic literature review and meta-analysis.

Materials and methods: Electronic databases were searched for studies published on the evaluation of the Prostar XL vessel closure device. There was no restriction by study design or patient population. Appraisal of studies for inclusion and data extraction were performed independently by two reviewers. Meta-analysis was performed where feasible.

Results: Twenty-one studies were included, which reported data specifically for closure of large (≥10 Fr) femoral arterial access sites using the Prostar XL device. The Prostar XL device, used for closure of these large femoral artery access sites, had a high rate of procedural success equal to that reported for closure by femoral artery surgical cut-down. There was evidence for reduced procedural time, time to discharge and time to ambulation. Complication rates were lower, but not significantly so, with Prostar XL vs. surgical cut-down.

Conclusions: The Prostar XL is an effective and safe device for use in percutaneous closure of large (≥10 Fr) femoral artery access sites, comparable to open surgical femoral artery cut-down. Furthermore, it may reduce procedure times and hospitalisations, thereby leading to potential cost savings.

Rapid Access Carotid Endarterectomy can be Performed in the Hyperacute Period without a Significant Increase in Procedural Risks

Salem M.K., Sayers R.D., Bown M.J., Eveson D.J., Robinson T.G., Naylor A.R. Eur J Vasc Endovasc Surg 2011;41:72-8.

Objectives: The highest risk of recurrent stroke after suffering a transient ischaemic attack (TIA) or minor stroke is during the first 7–14 days. Contemporary guidelines recommend that carotid endarterectomy (CEA) should be performed within this time period, but there are concerns regarding (1) how this can be achieved logistically and (2) whether this policy is associated with a significant increase in procedural risks.

Design: This is a prospective, consecutive study of delays to surgery and 30-day outcomes in recently symptomatic patients who underwent CEA between 1 October 2008 and 15 June 2010 after the creation of a rapid access TIA service.

Results: A total of 109 symptomatic patients underwent CEA, 78% within 14 days of the index event and 90% within 14 days of referral. The median delay to surgery was 9 days from the index event and 4 days from referral. There were no perioperative deaths. Two strokes occurred (one intra-operative and one post-operative) to give a 30-day death/stroke rate of 1.83%. Patients undergoing CEA within 14 days of the index event incurred a death/stroke rate of 2.4% (2/84), increasing to 4.3% in patients undergoing surgery within 7 days (2/47).

Conclusion: Service reconfigurations can lead to significant reductions in delays to treatment in patients with symptomatic carotid disease. CEA can be performed in the hyperacute period without significantly increasing the operative risk.